

ABSTRACT OF THE DISCLOSURE

A method is provided which includes etching one or more layers in an etch chamber while introducing a noble gas heavier than helium into the etch chamber. In a preferred embodiment, the introduction of such a noble gas may reduce the formation of defects within an etched portion of the semiconductor topography. Such defects may include bilayer mounds of nitride and a material comprising silicon, for example. In some embodiments, the method may include etching a stack of layers within a single etch chamber. The stack of layers may include, for example, a nitride layer interposed between an anti-reflective layer and an underlying layer. In addition, the single etch chamber may be a plasma etch chamber designed to etch materials comprising silicon. As such, the method may include etching an anti-reflective layer in a plasma etch chamber designed to etch materials comprising silicon.

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